

## **REMARKS**

Favorable reconsideration of this application, as amended, is respectfully solicited.

Claims 70, 74, and 79 have been cancelled without prejudice or disclaimer. As claims 3, 5, 7, 15, 21-39, 42, 44, 46, and 58-63 remain cancelled without prejudice, claims 1, 2, 4, 6, 8-14, 16-20, 40, 41, 43, 45, 47-57 and 64-69, 71-73, 75-78, 80, and 81 are under consideration upon entry of the present amendments. No new matter has been introduced by these amendments.

In the Office Action, claims 70, 74, and 79 have been rejected under 35 U.S.C. §112, first paragraph for allegedly failing to comply with the written description requirement. Specifically, the Examiner contends that the scope of the phrase “slow set anionic bitumen emulsion”, as used in the rejected claims, is not supported by the application as filed because the application allegedly discloses only a single species (i.e., Grade SS60) of the recited class. However, without conceding to the grounds of the rejection, and in an effort to expedite prosecution, Applicants have cancelled claims 70, 74, and 79 without prejudice. Accordingly, the foregoing §112, first paragraph rejection has been rendered moot.

Claims 70, 74, and 79 have been rejected under 35 U.S.C. §112, second paragraph for alleged indefiniteness. Specifically, the Examiner contends that the term “slow” in the phrase “slow set anionic bitumen emulsion” is a relative term for which the application allegedly provides no guidance for ascertaining the scope thereof. However, without conceding to the grounds of the rejection, and in an effort to expedite prosecution, Applicants have cancelled claims 70, 74, and 79 without prejudice. Accordingly, the foregoing §112, second paragraph rejection has been rendered moot.

Claims 1, 2, 6, 8, 9, 12-14, 16-20, 40, 41, 45, 47, 48, 52-56, 57, and 66-68 have been rejected under 35 U.S.C. §103 (a) as allegedly unpatentable in view of International Publication No. WO 00/40669 to de Bruyn ("de Bruyn") in further view of U.S. Patent 4,597,928 to Terentiev et al. In setting forth the grounds for rejection, the Examiner considers de Bruyn to teach or suggest all of the features of the indicated claims, except the feature that a complex fatty acid, such as fulvic acid, is included in the binder composition or resulting construction material. However, the Examiner contends that this deficiency of de Bruyn is compensated by Terentiev et al. Specifically, the Examiner notes the teaching in de Bruyn of adding sulfuric acid as a catalyst to facilitate polymerization. The Examiner couples this teaching in de Bruyn with the teaching in Terentiev et al. that sulfuric acid can be substituted by humic or fulvic acids. The Examiner refers, in particular, to col. 3, lines 59-63 of Terentiev et al.

Significantly, the foregoing grounds for rejection are reiterated from the previous Office Action dated April 9, 2010. In response thereto, Applicants submitted arguments along with a Declaration (hereinafter referred to as the "Declaration") executed by inventor Henri A. de Bruyn in Applicants' Response dated May 12, 2011.

As discussed in Paragraph 5 of the Declaration, the Examiner acknowledges that de Bruyn does not teach or suggest any humic substance, such as fulvic acid. Instead, de Bruyn teaches the use of sulfuric acid (e.g., col. 3, lines 8-10 of de Bruyn). Significantly, as de Bruyn is directed to road construction and related materials, one skilled in the art would rely on the teachings of de Bruyn for guidance in producing an improved road construction material. Since de Bruyn does not in any way teach or suggest a humic substance altogether, de Bruyn provides not the slightest motivation to one skilled in the art to include a humic substance, much less fulvic acid in particular.

The Examiner contends that Terentiev et al. provides motivation for one to modify de Bruyn by the teaching in Terentiev et al. that sulfuric acid can be substituted with humic or fulvic acids (Examiner cites, in particular, col. 3, lines 59-63 of Terentiev et al.). As discussed in Paragraph 6 of the Declaration, however, Terentiev et al. is not directed to any composition remotely similar to a road construction material. Terentiev et al. does not even teach or suggest a soil-containing formulation. Instead, Terentiev et al. is directed to fiberboard materials produced from wood pulp. The fiberboard materials of Terentiev et al. would be useless within the scope of the instant claims. No correlation exists in the requirements for road construction and fiberboard materials. The two fields are unrelated, and thus, what is beneficial for one may be entirely detrimental to the other. Hence, one skilled in the art would not seek the guidance of Terentiev et al. in attempting to improve a road construction material.

Moreover, as discussed in Paragraph 7 of the Declaration, one skilled in the art of road construction materials would readily find unfounded the notion in Terentiev et al. that the same acidity can be provided whether sulfuric acid or a humic or fulvic acid is used. As asserted by Henri A. de Bruyn, even at higher temperatures and at high concentrations of fulvic acid, the instant soil-containing construction materials would not achieve the same acidity as sulfuric acid on a mole-by-mole basis. As further asserted by Henri A. de Bruyn, fulvic acid has not been found in the instant invention to have a significant impact on the acidity of the final product. Rather, fulvic acid has been found in the instant invention to significantly promote polymerization and crosslinking (i.e., curing) of the final product to a degree that was completely unexpected. This unexpected result is largely a result of the special interactions between fulvic acid and soil particles. Such special interactions are nowhere suggested in Terentiev et al. since Terentiev et al. does not teach or suggest soil.

In the instant Action, Applicants consider the Examiner to have not given due consideration to the Declaration previously submitted. Indeed, in the Response to Arguments section of the instant Action, Applicants note that, although the Examiner refers to “Applicant’s arguments”, the Examiner does not mention or make any reference to the Declaration.

In particular, the Examiner makes the rebuttal (pages 9-10 of the instant Action) that, although de Bruyn and Terentiev et al. are directed to different end products (i.e., road construction and fiberboard materials, respectively) they are allegedly related because both are using a formaldehyde-based thermosetting resin. The Examiner furthermore asserts that, although de Bruyn uses soil particles while Terentiev et al. uses wood chips, the principle is the same. However, Applicants consider the Examiner to be largely overlooking the aspect of the Declaration wherein it was asserted that the fiberboard materials of Terentiev et al. would be useless within the scope of the instant claims, and that no correlation exists in the requirements for road construction and fiberboard materials. The fact that the two references are directed to formaldehyde-based thermosetting resin does not, in itself, establish motivation for one skilled in the art to modify one reference based on the other. Motivation must also be premised on the goals sought for each reference. If such goals are not related or are contradictory, then a lack of motivation is found for one skilled in the art to contemplate the proposed modification, even though the references may generally make use of materials that are overlapping in some aspects. For these reasons, Applicants maintain that one skilled in the art would not seek the guidance of Terentiev et al. in attempting to improve a road construction material. Thus, at least for this reason, Applicants consider the obviousness rejection to be improper, and respectfully request withdrawal thereof.

Applicants also believe that due consideration was not provided to the aspect of the Declaration (Paragraph 7 therein) wherein it was asserted that, even at higher temperatures and at high concentrations of fulvic acid, the instant soil-containing construction materials would not achieve the same acidity as sulfuric acid on a mole-by-mole basis, and that fulvic acid has not been found in the instant invention to have a significant impact on the acidity of the final product. As further asserted in Paragraph 7 of the Declaration, fulvic acid has been found in the instant invention to significantly promote polymerization and crosslinking (i.e., curing) of the final product to a degree that was completely unexpected, and this unexpected result is largely a result of the special interactions between fulvic acid and soil particles. Such special interactions are nowhere suggested in Terentiev et al. since Terentiev et al. does not teach or suggest soil. Thus, there is nothing in either de Bruyn or Terentiev et al. that could in any way apprise one skilled in the art of the unexpected result of using fulvic acid under the special conditions claimed. Applicants respectfully request consideration of these unexpected results in further establishing patentability of the instant claims over the art of record.

Claims 10, 11, 49, and 50 have been rejected under 35 U.S.C. §103 (a) in view of de Bruyn and Terentiev et al., as above, in further view of U.S. Patent No. 4,376,088 to Prather ("Prather"). The Examiner relies on de Bruyn and Terentiev et al., as above, for allegedly teaching base claims 1 and 40. The Examiner acknowledges that de Bruyn and Terentiev et al. fail to teach the additional feature of the rejected claims that a surfactant be included as a binding promoter. Nevertheless, the Examiner relies on Prather for allegedly teaching the use of a surfactant in such a composition. However, without conceding the Examiner's assertions with respect to Prather, Applicants assert that the rejected claims are patentable for at least the reason that de Bruyn and Terentiev et al. fail to render claims 1 and 40 unpatentable, for reasons

provided above. Moreover, Prather does not compensate for the deficiencies noted in de Bruyn and Terentiev et al. Thus, the combination of de Bruyn, Terentiev et al., and Prather likewise fails to render the indicated claims obvious.

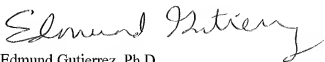
Claims 4, 43, 64, and 65 have been rejected under 35 U.S.C. §103 (a) in view of de Bruyn and Terentiev et al., as above, in further view of U.S. Patent No. 4,886,854 to Markessini et al. ("Markessini"). The Examiner relies on de Bruyn and Terentiev et al., as above, for allegedly teaching base claims 1 and 40. The Examiner acknowledges that de Bruyn and Terentiev et al. fail to teach the additional feature of the rejected claims that a sugar be included in the method. Nevertheless, the Examiner relies on Markessini et al. for allegedly teaching a sugar in such a composition. However, without conceding the Examiner's assertions with respect to Markessini, Applicants assert that the rejected claims are patentable for at least the reason that de Bruyn and Terentiev et al. fail to render claims 1 and 40 unpatentable, for reasons provided above. Moreover, Markessini does not compensate for the deficiencies noted in de Bruyn and Terentiev et al. Thus, the combination of de Bruyn, Terentiev et al., and Markessini likewise fails to render the indicated claims obvious.

The Examiner has also rejected claim 67 under 35 U.S.C. §103 (a) in view of de Bruyn and Terentiev et al., as above, in further view of U.S. Patent No. 5,523,049 to Terpstra. The Examiner relies on de Bruyn and Terentiev et al., as above, for allegedly teaching base claims 1 and 40. As far as the additional humic acid component recited in claim 67, the Examiner contends that Terpstra teaches this feature. However, as Terpstra does not compensate for any of the deficiencies already noted for the combination of de Bruyn and Terentiev et al., the combination of de Bruyn, Terentiev et al., and Terpstra is at least similarly deficient.

Moreover, Applicants point out that bitumen and anionic bitumen emulsion are specified in several dependent claims (e.g., claims 8, 9, 47, 48, 71, 73, 75, 77, 78, and 81). With regard to claims 8 and 9, the Examiner considers bitumen and anionic bitumen emulsion not to add further patentability in view of the alleged teaching in de Bruyn of including an anionic bitumen emulsion prior to setting. However, the Examiner has not considered the many benefits, advantages, and unexpected results in using an anionic bitumen emulsion, and a slow set anionic bitumen emulsion in particular, in the road construction materials as instantly claimed. In the instant compositions, the anionic bitumen emulsion can further favorably interact with fulvic acid, which is not possible in the composition taught in de Bruyn since de Bruyn fails to teach fulvic acid. Applicants direct the Examiner, in particular, to page 20, lines 15-24 of the instant application wherein it is taught, in particular, that bitumen adds further water resistance, strength, and suppleness to the solid aggregate mix. As also discussed on page 47, lines 20-23 of the application as filed, bitumen showed an improvement in both dry and wet strength. As also discussed in the paragraph bridging pages 49-51, although bitumen emulsion is widely used in road construction and maintenance as binding and waterproofing agents, the large, positive interaction between the resin and bitumen was not anticipated. As also shown from the passage on page 62, top, to page 63, line 20 of the application as filed, the anionic bitumen emulsion used herein, produced unexpected improvements in compression strengths and indirect tensile strengths.

In view of the foregoing comments and amendments submitted in response to the Office Action, which are deemed to be fully in compliance with and responsive to the Examiner's requirements, the early and favorable reconsideration and allowance of the application is earnestly solicited.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Edmund Gutierrez".

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